Demands, values, and burnout

Relevance for physicians

Michael P. Leiter PhD Erica Frank MD Timothy J. Matheson MD MEd

ABSTRACT

OBJECTIVE To explore the interaction between workload and values congruence (personal values with health care system values) in the context of burnout and physician engagement and to explore the relative importance of these factors by sex, given the distinct work patterns of male and female physicians.

DESIGN National mailed survey.

SETTING Canada.

PARTICIPANTS A random sample of 8100 Canadian physicians (response rate 40%, N=3213); 2536 responses (from physicians working more than 35 hours per week) were analyzed.

MAIN OUTCOME MEASURES Levels of burnout, values congruence, and workload, by sex, measured by the Maslach Burnout Inventory—General Scale and the Areas of Worklife Scale.

RESULTS Results showed a moderate level of burnout among Canadian physicians, with relatively positive scores on exhaustion, average scores on cynicism, and mildly negative scores on professional efficacy. A series of multiple regression analyses confirmed parallel main effect contributions from manageable workload and values congruence. Both workload and values congruence predicted exhaustion and cynicism for men and women ($P=.001$). Only values congruence provided a significant prediction of professional efficacy for both men and women ($P=.001$) These predictors interacted for women on all 3 aspects of burnout (exhaustion, cynicism, and diminished efficacy). Howevever, overall levels of the burnout indicators departed only modestly from normative levels.

CONCLUSION Workload and values congruence make distinct contributions to physician burnout. Work overload contributes to predicting exhaustion and cynicism; professional values crises contribute to predicting exhaustion, cynicism, and low professional efficacy. The interaction of values and workload for women in particular has implications for the distinct work-life patterns of male and female physicians. Specifically, the congruence of individual values with values inherent in the health care system appeared to be of greater consequence for women than for men.

EDITOR'S KEY POINTS

- Decades of research have confirmed that there is a high risk of physician burnout due to excessive demands and difficulties maintaining a sustainable work-life balance.
- Results of this study confirmed that in addition to workload, value congruence also contributed to predicting burnout among physicians.
- Workload and value congruence, however, interact differently for women and men. When experiencing congruence of their personal values with health care system values, women encountered less distress in demanding situations than when they experienced incongruence.

***Full text is available in English at www.cfp.ca.**
This article has been peer reviewed.
Can Fam Physician 2009;55:1224-5.e1-6

Contraintes, valeurs et épuisement professionnel

Qu'en est-il des médecins

Michael P. Leiter PhD   Erica Frank MD   Timothy J. Matheson MD MEd

RÉSUMÉ

OBJECTIF Examiner l'interaction entre charge de travail et compatibilité des valeurs (valeurs personnelles vs celles du système de santé) en rapport avec l'épuisement professionnel et la motivation des médecins, et vérifier l'importance relative de ces facteurs selon le sexe, compte tenu des régimes de travail différents des hommes et des femmes médecins.

TYPE D'ÉTUDE Enquête postale nationale.

CONTEXTE Canada.

PARTICIPANTS Un échantillon aléatoire de 8100 médecins canadiens (taux de réponse 40%, N=3213); 2536 réponses de médecins travaillant plus de 35 heures par semaine ont été analysées.

PRINCIPAUX PARAMÈTRES À L'ÉTUDE Taux d'épuisement professionnel, compatibilité des valeurs et charge de travail, en fonction du sexe, tel que mesuré par le *Maslach Burnout Inventory-General Scale* et par *Areas of Worklife Scale*.

RÉSULTATS Les résultats indiquent un taux modéré d'épuisement professionnel chez les médecins canadiens, avec des scores plutôt positifs pour l'épuisement, des scores moyens pour le cynisme et des scores légèrement négatifs pour l'efficacité professionnelle. Une série d'analyses de régression multiple a confirmé que la charge de travail et la compatibilité des valeurs contribuaient de façon importante et parallèle. La charge de travail et la compatibilité des valeurs prédisaient toutes deux l'épuisement et le cynisme pour les 2 sexes ($P=,001$). Seule la compatibilité des valeurs était un indicateur significatif de l'efficacité professionnelle, tant chez les hommes que chez les femmes ($P=,001$). Ces indicateurs interagissaient chez les femmes sur 3 aspects de l'épuisement professionnel (épuisement, cynisme et baisse d'efficacité). Toutefois, les niveaux généraux des indicateurs de l'épuisement professionnel différaient peu des niveaux normatifs.

CONCLUSION La tâche de travail et la compatibilité des valeurs contribuent indépendamment à l'épuisement professionnel. La tâche de travail est un indicateur de l'épuisement et du cynisme; le conflit des valeurs professionnelles est un indicateur de l'épuisement, du cynisme et de la baisse d'efficacité professionnelle. Surtout pour les femmes, l'interaction entre valeurs et charge de travail est en partie responsable des régimes de travail différents des hommes et des femmes médecins. En particulier, la compatibilité entre les valeurs personnelles et celles du système de santé semblait avoir plus de conséquence pour les femmes que pour les hommes.

POINTS DE REPÈRE DU RÉDACTEUR

- Des décennies de recherche ont confirmé que le médecin court un fort risque d'épuisement professionnel en raison d'une charge de travail excessive et de la difficulté à concilier profession et vie privée.
- Les résultats de cette étude confirment qu'en plus de la charge de travail, la compatibilité des valeurs contribuait aussi à prédire l'épuisement professionnel chez les médecins.
- Toutefois, la charge de travail et la compatibilité des valeurs interagissent différemment chez les hommes et chez les femmes. Lorsqu'elles jugent leurs valeurs personnelles conformes à celles du système de santé, les femmes médecins éprouvent moins de détresse dans les situations exigeantes que lorsqu'elles jugent ces valeurs incompatibles.

***Le texte intégral est accessible en anglais à www.cfp.ca.**
Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2009;55:1224-5.e1-6

The concept of job burnout has evolved from a syndrome focusing specifically on human-service providers to a hazard relevant to any profession that calls for intense involvement from its practitioners.[1] Research on this syndrome has emphasized the link between excessive demands and chronic exhaustion.[2] Although important, this focus is incomplete, as it neglects the dimensions of involvement and professional efficacy that are central to professions such as medicine. The job demands–resources model outlined by Demerouti et al provides a more complete perspective by examining resources as well as demands in the psychological experience of work.[3] To comprehend health care professionals' experiences requires that values also be examined—specifically, the congruence of personal values with those of the larger system in which people pursue their professions.[4] Practitioners bring values that they developed through personal experience and professional training to their work, where they encounter values inherent in the policies and procedures of clinics, hospitals, and health care systems.[5] We hypothesized that the congruence of personal and system values would predict physicians' energy, involvement, and efficacy, factors that underlie the continuum from job burnout to work engagement.

Decades of research have confirmed a high risk of physician burnout from excessive demands and difficulties maintaining a sustainable work-life balance.[6,7] Studies of medical residents have reported very high levels of burnout, especially in the exhaustion dimension of the syndrome,[8,9] although not necessarily accompanied by deterioration of clinical performance or physician health. For example, although depression increased resident error rates, a high level of burnout did not.[9] An apparent contradiction arises, however, when a large proportion of a sample has a high level of burnout. Using norms from the 1980s, as many as 50% of research samples attain the *high burnout* designation, while research has identified major problems with burnout affecting performance or health in only 5% to 8% of working samples.[10] Further, firm diagnostic criteria for burnout remain elusive.

Even an imprecise diagnosis of burnout has serious implications. Research has confirmed that negative relationships exist between the burnout indicators—exhaustion, depersonalization, and diminished efficacy—and various outcomes, such as job satisfaction,[11] patient satisfaction,[12] and self-assessed quality of care. Identifying *work engagement* as a contrast to burnout[4,13] has broadened the question to encompass the vigour and dedication people bring to their work. Less-than-debilitating breakdowns can still erode the quality of physicians' work.[14] The issue is not simply about burnout as a debilitating condition, but as a state contradicting a healthy, dedicated, and vigorous approach to work among people in values-driven professions.

Implications vary by sex. Female physicians typically work somewhat fewer hours than their male counterparts, but they are at least as likely to report indicators of burnout.[15,16] Generally, women score higher on the exhaustion dimension of burnout and lower on the depersonalization and personal accomplishment dimensions.[1] They also often carry a greater responsibility for home demands.[17,18] Sex differences go beyond the demand side of balance; women medical faculty members also place a lower value on leadership, scholarship, and national recognition compared with men.[19] These differences supported our hypothesis that values and manageable workload would interact differently for women and men when predicting burnout.

METHODS

A survey to address these aspects of physician burnout, among other issues, was developed in collaboration with the Canadian Medical Association (CMA), with input from the Association of Faculties of Medicine of Canada, the Physician Health Program of British Columbia, the Canadian Association of Interns and Residents, the Canadian Physician Health Network, the College of Family Physicians of Canada, and the Royal College of Physicians and Surgeons of Canada.

Before distribution, the CMA promoted the survey, conducted pilot assessments, and received ethics approval from the University of British Columbia Institutional Review Board. We sent the questionnaires and cover letters in English and French to 8100 Canadian physicians randomly selected from the CMA membership database, excluding residents and retired physicians. We invited participants to register for a draw awarding 2 $1000 prizes to encourage responses.

Following a modified Dillman method,[20] the initial survey mailing (late November 2007) and the first follow-up mailing (mid-December 2007) went to the entire sample of 8100 physicians. A reminder e-mail was sent (to those whose e-mail addresses were available) in January 2008, followed by a third survey mailing to all nonrespondents. A fourth follow-up survey mailing was sent to physicians in British Columbia in March 2008. Survey responses were accepted until May 2008. To ensure anonymity, an external third party created a blinded system. From the original mailing list, 166 physicians had no known mailing address or were retired, residents, or working abroad; eliminating these cases reduced the original study population to 7934 possible participants.

The questionnaire included a short version of the Maslach Burnout Inventory—General Scale (MBI-GS),[21] which can assess burnout in a full range of occupations, including human services, with less skewed distributions than the original MBI Human Service Survey.[1] The improved distribution on the MBI-GS permits a more thorough examination of all 3 aspects of burnout. (In contrast, the highly skewed distribution of the original

depersonalization scale both reflected a strong social desirability bias and violated the normal distribution assumptions of most statistical procedures.[1,2]) The subscales of the MBI-GS are exhaustion (chronic lack of energy), cynicism (a distant, uncaring relationship with work), and efficacy (confidence in one's capacity to do high-quality, important work [low when experiencing burnout]). Manageable workload and values congruence were assessed with the Areas of Worklife Survey.[22] Work hours comprised the self-reported combination of weekly hours devoted to patient care and to other professional activities. Responses from physicians who worked fewer than 35 hours a week were excluded from the analysis.

Bivariate and multiple regression analyses were used to assess the relationships among variables.

RESULTS

A total of 3213 of the 7934 invited physicians responded, for a response rate of 40%. We limited the analyses to the 2536 respondents who worked more than 35 hours weekly to assure at least a standard full-time employment status (1694 men, 836 women); as such, 31.3% of the 8100 physicians originally sampled participated in the study. As shown in **Table 1**, the multiple regression analyses confirmed that both workload and values congruence predicted exhaustion and cynicism for men and women ($P=.001$). Only values congruence provided a significant prediction of professional efficacy for both men and women ($P=.001$). The interaction of workload and values congruence made a significant contribution to all 3 aspects of burnout for women and for none of the 3 analyses for men.

Relative to a normative sample of 3150 Canadian health care providers, both women and men scored lower than their respective norms[21] on exhaustion measures and near the norm for measures of cynicism (**Table 2**[21,22] and **Table 3**[21,22]). The norms were established for the MBI manual and were part of an international sample used for developing that measure.[23] Women scored lower than the norm on efficacy measures, while men scored near the norm. Both men

Table 1. Tests of main effects and interactions: *A) women and B) men.*

A)

DIMENSION OF BURNOUT	WORKLOAD β LEVEL	WORKLOAD *T* TEST	WORKLOAD *P* VALUE	VALUES CONGRUENCE β LEVEL	VALUES CONGRUENCE *T* TEST	VALUES CONGRUENCE *P* VALUE	INTERACTION β LEVEL	INTERACTION *T* TEST	INTERACTION *P* VALUE
Exhaustion	-0.37	-11.69	.001	-0.16	-5.01	.001	0.09	2.93	.003
Cynicism	-0.23	-7.27	.001	-0.24	-7.38	.001	0.09	2.69	.007
Efficacy	0.01	0.42	.672	0.15	4.18	.001	-0.09	-2.48	.014

B)

DIMENSION OF BURNOUT	WORKLOAD β LEVEL	WORKLOAD *T* TEST	WORKLOAD *P* VALUE	VALUES CONGRUENCE β LEVEL	VALUES CONGRUENCE *T* TEST	VALUES CONGRUENCE *P* VALUE	INTERACTION β LEVEL	INTERACTION *T* TEST	INTERACTION *P* VALUE
Exhaustion	-0.38	-17.04	.001	-0.17	-7.46	.001	0.03	1.41	.160
Cynicism	-0.25	-11.13	.001	-0.25	-11.07	.001	0.01	0.44	.663
Efficacy	-0.04	-1.74	.672	0.16	6.46	.001	0.04	1.54	.123

Table 2. Scores relative to norms and relationships among variables for women: *N=836.*

						CORRELATION COEFFICIENTS				
VARIABLES*	MEAN	SD	NORM[21,22] (WOMEN)	*T* TEST	*P* VALUE	CYNICISM	PROFESSIONAL EFFICACY	MANAGEABLE WORKLOAD	VALUES CONGRUENCE	WORK HOURS
Exhaustion	2.27	1.30	2.62	19.36	.001	0.65†	-0.19†	-0.38†	-0.21†	0.05
Cynicism	1.97	1.24	1.95	-1.06	.29‡		-0.29†	-0.26†	-0.28†	-0.01
Professional efficacy	4.29	1.09	4.49	12.42	.001			0.03	0.16†	0.06
Manageable workload	2.42	0.85	2.63	14.15	.001				0.09§	-0.40†
Value congruence	3.08	0.62	3.34	24.66	.001					0.01
Work hours	50.04	10.52								

*Exhaustion, cynicism, and efficacy were measured with the Maslach Burnout Inventory—General Scale; possible scores range from 0 to 6. Manageable workload and values congruence were measured by the Areas of Worklife Scale; possible scores range from 0 to 5.

†$P<.001$.

‡Not significant.

§$P<.01$.

Table 3. Scores relative to norms and relationships among variables for men: *N = 1694.*

						CORRELATION COEFFICIENTS				
VARIABLES*	MEAN	SD	NORM[21,22] (MEN)	*T* TEST	*P* VALUE	CYNICISM	PROFESSIONAL EFFICACY	MANAGEABLE WORKLOAD	VALUES CONGRUENCE	WORK HOURS
Exhaustion	1.95	1.34	2.47	15.43	.001	0.68†	-0.15†	-0.40†	-0.22†	0.14†
Cynicism	2.04	1.36	2.08	1.11	.27‡		-0.20†	-0.29†	-0.29†	0.11†
Professional efficacy	4.43	1.14	4.46	1.15	.25‡			-0.02	0.15†	0.06
Manageable workload	2.45	0.83	2.75	10.98	.001				0.14†	-0.41†
Value congruence	3.13	0.65	3.25	4.62	.01					-0.09§
Work hours	53.71	12.35								

*Exhaustion, cynicism, and efficacy were measured with the Maslach Burnout Inventory—General Scale; possible scores range from 0 to 6. Manageable workload and values congruence were measured by the Areas of Worklife Scale; possible scores range from 0 to 5.
†$P < .001$.
‡Not significant.
§$P < .01$.

Table 4. Comparisons of scores between women and men

	WOMEN		MEN			
VARIABLES*	MEAN	SD	MEAN	SD	*T* TEST	*P* VALUE
Exhaustion	2.27	1.30	1.95	1.34	5.71	.001
Cynicism	1.97	1.24	2.04	1.36	-1.21	.225
Professional efficacy	4.29	1.09	4.43	1.14	-2.95	.003
Manageable workload	2.42	0.85	2.45	0.83	-0.76	.446
Value congruence	3.08	0.62	3.13	0.65	-1.65	.099
Work hours	50.04	10.52	53.71	12.35	-7.42	.001

*Exhaustion, cynicism, and efficacy were measured with the Maslach Burnout Inventory—General Scale; possible scores range from 0 to 6. Manageable workload and values congruence were measured by the Areas of Worklife Scale; possible scores range from 0 to 5.

and women scored below the mean for manageable workload and values congruence.[22] As indicated in **Table 4**, women scored higher than men on exhaustion measures and lower on professional efficacy measures, and worked fewer hours per week; there were no differences in measures of cynicism, workload, or values congruence. Work hours were negatively related to manageable workload to an equal extent for men and for women. Workload was significantly related to exhaustion and cynicism for both men and women ($P < .001$); values congruence was related to all aspects of burnout for both groups ($P < .01$).

The interaction between workload and values congruence differed for women and men (**Figure 1** and **Figure 2,** respectively). For women, the slopes of the 2 lines differed ($z = 2.46$, $P < .01$). Women with high levels of values congruence maintained a high sense of efficacy regardless of whether workload was unmanageable or manageable. Women with low levels of values congruence maintained a high level of efficacy if workload was manageable, but had a markedly lower sense of efficacy if workload was unmanageable.

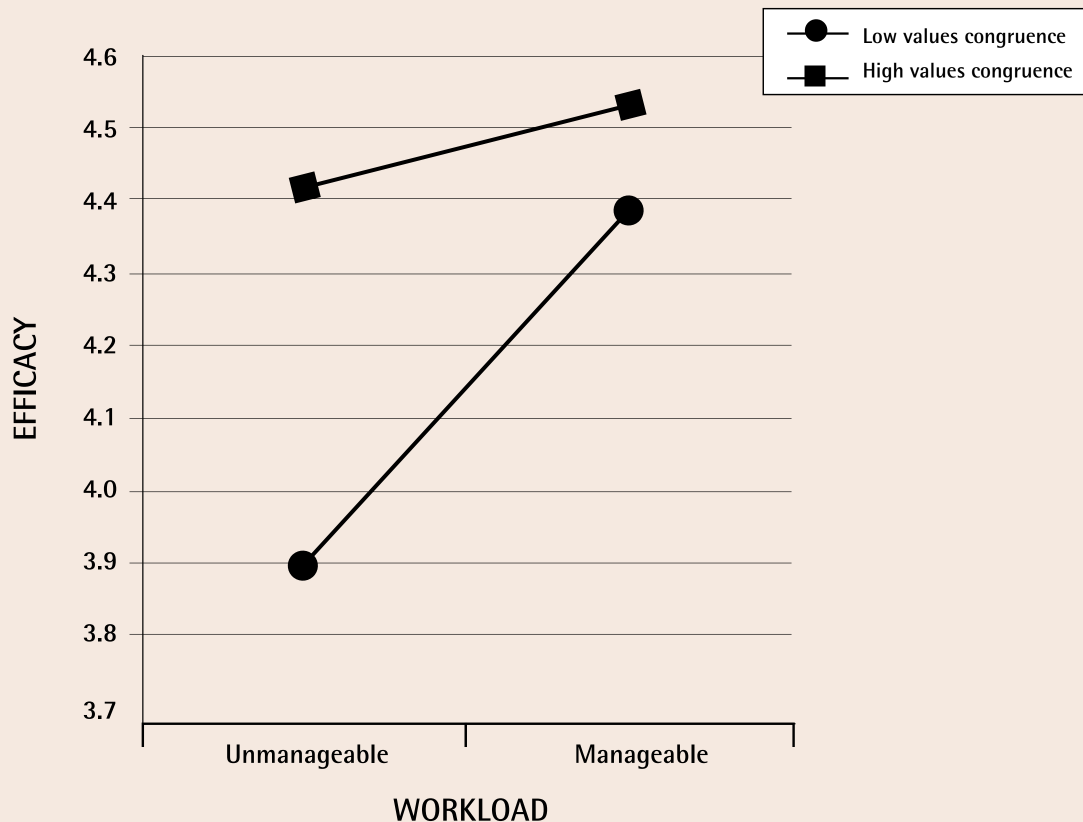
In contrast, for men the slopes of the 2 lines were closer to parallel ($z = 0.42$; $P = .33$, not significant), with the distance between the 2 lines reflecting the main effect for values congruence. The weak slope of the 2 lines reflected the nonsignificant main effect for manageable workload. Regardless of the level of values congruence, manageability of workload had a weak, nonsignificant association with efficacy.

Women with high levels of values congruence reported similar levels of exhaustion and cynicism whether they had manageable or unmanageable workloads; women with low levels of values congruence and men, regardless of values congruence, reported greater exhaustion and cynicism if confronted with unmanageable workloads.

DISCUSSION

Our results confirmed that both values congruence and workload contribute to predicting burnout among physicians. The contribution of values congruence went beyond the information provided by work overload alone: both processes—values and workload—contributed to the prediction of exhaustion and cynicism, while only values congruence was a significant predictor of

Figure 1. Relationships among workload, values congruence, and professional efficacy for women: $z = 2.46$, $P < .01$.



professional efficacy. The results also confirmed that workload and values congruence interact differently for women and men. The regression analysis confirmed significant interactions for women on all 3 aspects of burnout; for men, the analysis confirmed only main effects of workload and values. The interaction analysis suggested that values congruence has a buffering effect for women. Specifically, when experiencing congruence of their personal values with health system values, women encountered less distress in demanding situations than when they experienced incongruence.

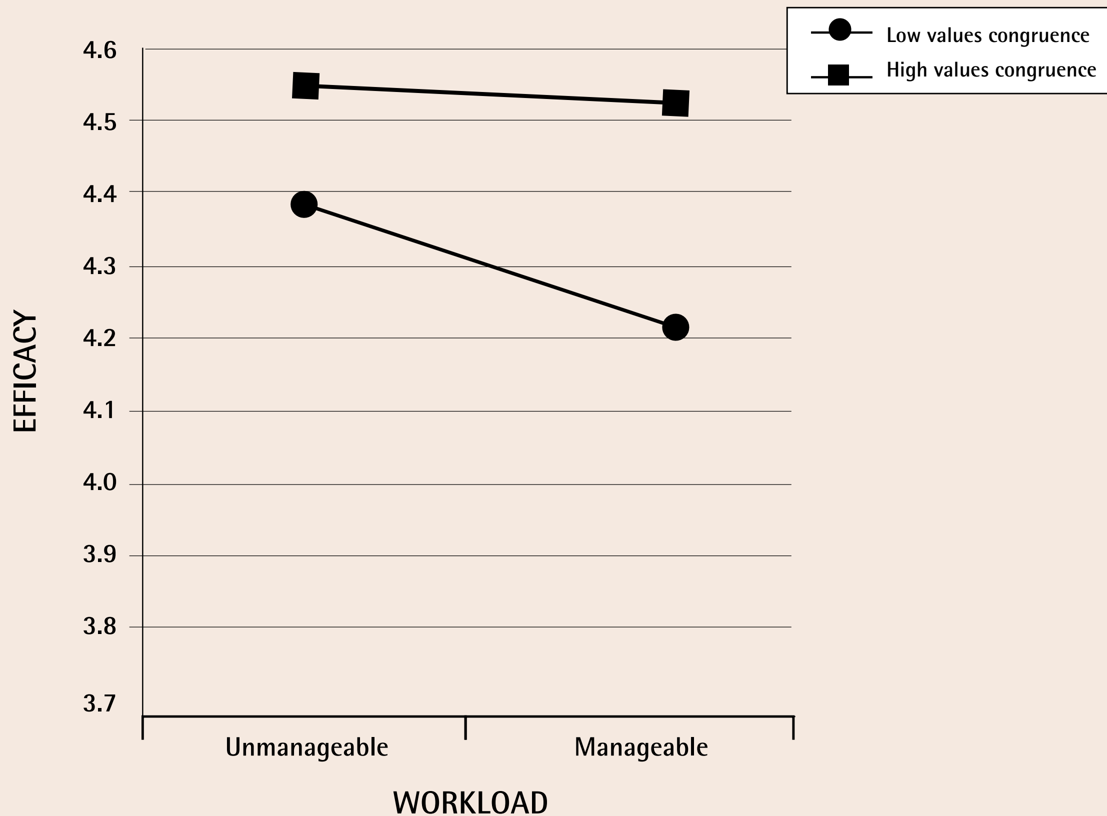
The distinct relevance of values for women might be related to differences in their approaches to work. Despite working fewer hours, women reported more exhaustion and lower efficacy than did men, consistent with previous research.[1] Men and women reported identical levels of manageable workload; the correlational analysis indicated that work hours accounted for 16% of the variance in manageable workload for both men and women. This pattern suggests that the absolute levels of these variables have less importance; it is the way men and women integrate work demands and values congruence into their work lives that has the greater effect. Previous research has noted that women physicians were typically satisfied with their careers. Least likely to be satisfied with their careers were younger physicians, physicians with the most work stress or a history of harassment, and physicians with the least control of their work (with an extraordinarily high odds ratio of 11.3 compared with those who always or almost always had control of their work).[24]

Our results depart from recent studies' findings of high levels of burnout among physicians.[6-9] A possible explanation of this departure is that we excluded residents, who are more likely to experience high workloads, sleep deprivation, and low loci of control than fully trained physicians are. A survey including both residents and physicians with a comparison of results would help to clarify these distinctions.

Limitations

Our study was limited by its reliance on a single source of self-reported data from a questionnaire. Although the survey response rate of 40% is good for a mailed survey of Canadian physicians, it is lower than the 52% average for large-sample questionnaires.[25] Further, only 31.3% of the initial sample of physicians were considered eligible (78.9% of the respondents); a higher rate of usable responses would have provided more confidence in the data's representativeness in terms of relative scores,

Figure 2. Relationships among workload, values congruence, and professional efficacy for men: *z = 0.42, not significant.*



although it would have been less likely to have influenced the relationships among the variables that were the focus of this study. The questionnaires also provided little detail about the nature of the specific workload challenges or values conflicts that physicians confronted, limiting interpretation to a general level.

Conclusion

This survey demonstrated that both work demands and values conflicts are integral to physicians' experience of the core aspects of burnout and work engagement. Further, at least for women physicians, congruence of values buffers the relationship between work overload and exhaustion, cynicism, and professional efficacy.

Dr Leiter is Director of the Centre for Organizational Research and Development at Acadia University in Wolfville, NS. **Dr Frank** is a Professor in the School of Population and Public Health at the University of British Columbia in Vancouver. **Dr Matheson** a faculty member in the Department of Family Medicine at Dalhousie University in Halifax, NS.

Acknowledgment
This report was made possible by the Canadian Medical Foundation and its donor, MD Financial.

Contributors
Drs Leiter, **Frank**, and **Matheson** contributed to concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests
None declared

Correspondence
Dr Michael P. Leiter, Acadia University, Centre for Organizational Research and Development, 24 Highland Ave, Wolfville, NS B4P 2R6; e-mail **michael.leiter@acadiau.ca**

References

1. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol* 2001;52:397-422.
2. Halbesleben JR, Buckley MR. Burnout in organizational life. *J Manag* 2004;30(6):859-79.
3. Demerouti E, Bakker AB, Nachreiner F, Schaufeli WB. The job demands-resources model of burnout. *J Appl Psychol* 2001;86(3):499-512.
4. Maslach C, Leiter MP. *The truth about burnout.* San Francisco, CA: Jossey Bass; 1997.
5. Jones G, Sagar S, Wong R. The effects of stress on oncology staff. *CMAJ* 2000;163(7):807.
6. Grunfeld E, Whelan TJ, Zitzelsberger L, Willan AR, Montesanto B, Evans W. Cancer care workers in Ontario: prevalence of burnout, job stress and job satisfaction *CMAJ* 2000;163(2):166-9.
7. Spickard A Jr, Gabbe SG, Christensen JF. Mid-career burnout in generalist and specialist physicians. *JAMA* 2002;288(12):1447-50.
8. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med* 2002;136(5):358-67.
9. Fahrenkopf AM, Sectish TC, Barger LK, Sharek PJ, Lewin D, Chiang VW, et al. Rates of medication errors among depressed and burnt out. *BMJ* 2008;336(7642):488-91. Epub 2008 Feb 7. DOI: 10.1136/bmj.39469.763218.BE.
10. Schaufeli WB, Bakker A, Schaap C, Kladler A, Hoogduin CAL. On the clinical validity of the Maslach Burnout Inventory and the Burnout Measure. *Psychol Health* 2001;16(5):565-82.
11. Mirvis DM, Graney MJ, Kilpatrick AO. Burnout among leaders of the Department of Veterans Affairs medical centers: contributing factors as determined by a longitudinal study. *J Health Hum Serv Adm* 1999;21(3):390-412.
12. Leiter MP, Harvie P, Frizzell C. The correspondence of patient satisfaction and nurse burnout. *Soc Sci Med* 1998;47(10):1611-7.
13. Schaufeli WB, Bakker AB. Job demands, job resources and their relationship with burnout and engagement: a multi-sample study. *J Organ Behav* 2004;25(3):293-315.

14. Gabbard GO. The role of compulsiveness in the normal physician. *JAMA* 1985;254(20):2926-9.
15. McMurray JE, Linzer M, Konrad TR, Douglas J, Shugerman R, Nelson K. The work lives of women physicians. *J Gen Intern Med* 2000;15(6):372-80.
16. Thomas NK. Resident burnout. *JAMA* 2004;292(23):2880-9.
17. Gautam M. Women in medicine: stresses and solutions. *West J Med* 2001;174(1):37-41.
18. Potee RA, Gerber AJ, Ickovics JR. Medicine and motherhood: shifting trends among female physicians from 1922 to 1999. *Acad Med* 1999;74(8):911-9.
19. Buckley LM, Sanders K, Shih M, Kallar S, Hampton C. Obstacles to promotion? Values of women faculty about career success and recognition. Committee on the Status of Women and Minorities, Virginia Commonwealth University, Medical College of Virginia Campus. *Acad Med* 2000;75(3):283-8.
20. Dillman DA. Mail and other self-administered questionnaires. In: Rossi PH, Wright JD, Anderson AB, editors. *Handbook of survey research*. San Diego, CA: Academic Press; 1983. p. 359-76.
21. Maslach C, Jackson SE, Leiter MP. *Maslach Burnout Inventory manual.* 3rd ed. Palo Alto, CA: Consulting Psychologists Press Inc; 1996.
22. Leiter MP, Maslach C. *Areas of Worklife Scale manual.* 4th ed. Wolfville, NS: Centre for Organizational Research Development, Acadia University; 2006.
23. Leiter MP, Schaufeli WB. Consistency of the burnout construct across occupations. *Anxiety Stress Coping* 1996;9(3):229-43.
24. Frank E, McMurray JE, Linzer M, Elon L. Career satisfaction of US women physicians: results from the Women Physicians' Health Study. Society of General Internal Medicine Career Satisfaction Study Group. *Arch Intern Med* 1999;159(13):1417-26.
25. Cummings SM, Savitz LA, Konrad TR. Reported response rates to mailed physician questionnaires. *Health Serv Res* 2001;35(6):1347-55.